

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte V. N. MALLIKARJUNA RAO

Appeal No. 95-0798
Application 08/042,200¹

ON BRIEF

Before KIMLIN, GARRIS and WEIFFENBACH, *Administrative Patent Judges*.

WEIFFENBACH, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-12 under the first paragraph of 35 U.S.C. § 112, the sole ground of rejection. In the final rejection, the examiner indicated that claims 13 and 14 would be allowable if amended in independent form. In an amendment after final action (paper no. 6), appellant rewrote claim 12 (from which

¹Application for patent filed April 2, 1993.

claims 13 and 14 depend) in independent form. In an advisory action (paper no. 7), the examiner indicated that the amendment would be entered upon filing an appeal and that upon entering the amendment, claims 12-14 would be allowable. Accordingly, claims 1-11 are before us for consideration. We reverse.

The Claimed Subject Matter

The claims on appeal are directed to a process for enriching the amount of $\text{CClF}_2\text{CClF}_2$ relative to CClF_2CF_3 using a vapor phase fluorination catalyst. The following claim is illustrative of the claimed subject matter:

1. A process for enriching the amount of $\text{CClF}_2\text{CClF}_2$ relative to the amount of CCl_2FCF_3 from an initial mixture containing $\text{CClF}_2\text{CClF}_2$ and CCl_2FCF_3 comprising the steps of:

contacting said initial mixture with hydrogen chloride in the vapor phase at an elevated temperature in the presence of a vapor phase fluorination catalyst to produce a product mixture containing $\text{C}_2\text{Cl}_2\text{F}_4$ and chlorination products of CCl_2FCF_3 wherein the weight ratio of $\text{CClF}_2\text{CClF}_2$ to the total $\text{C}_2\text{Cl}_2\text{F}_4$ is higher than the weight ratio of $\text{CClF}_2\text{CClF}_2$ to the total $\text{C}_2\text{Cl}_2\text{F}_4$ in the initial mixture; and separating chlorinated products of CCl_2FCF_3 in the product mixture from the $\text{C}_2\text{Cl}_2\text{F}_4$ therein.

Opinion

We have carefully considered the respective positions advanced by appellant and the examiner. For the reasons set forth below, we will not sustain the examiner's rejection.

The examiner has rejected claims 1-11 under the first paragraph of 35 U.S.C. § 112 on the ground that the disclosure is "enabling only for claims limited to the specifically disclosed catalysts

in the instant specification” (answer: p. 3). The examiner’s theory for lack of enablement is as follows:

The instant specification discloses that it is known in the art to enrich the amount of the claimed desired isomer in the claimed isomer mixture (page 1, background) and yet no prior art reference of record teaches the use of any hydrofluorination catalyst to selectively react HCl with the undesired isomer for this purpose. It is clear, therefore, that the use of a hydrofluorination catalyst to accomplish enriching the amount of the desired isomer by hydrochlorination would have been unpredictable to one of ordinary skill in the art.

It is this unpredictability which would result in the requirement for undue experimentation to determine which of the virtually unlimited catalysts included by the instant claims would cause selective reaction of one of the isomers in the reactive mixture.

The problem of selection of a suitable catalyst is exacerbated by the claimed requirement to use a “fluorination catalyst” to perform a hydrochlorination reaction. In fact, claim 1 requires nothing more of the catalyst than that it be a “fluorination catalyst”. It is incredible to urge that one of ordinary skill in the art would be able to determine without undue experimentation which of the virtually limitless number of “fluorination catalyst(s)” included by the claimed process would result in a selective hydrochlorination reaction of one component of a mixture of reactive isomers from the presentation of two examples in the specification. [Answer: pp. 3-4; emphasis in the original.]

The determination of enablement is a question of law based on underlying factual findings.

In re Vaeck, 947 F.2d 488, 495, 20 USPQ2d 1438, 1444 (Fed. Cir. 1991); *Atlas Powder Co. V. E.I. Du Pont De Nemours & Co.*, 750 F.2d 1569, 1513, 224 USPQ 409, 411 (Fed. Cir. 1984). In determining whether a disclosure would require undue experimentation to make the claimed subject matter, the examiner must consider the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, and the predictability or unpredictability of

the art. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404, (Fed. Cir. 1988), citing with approval *Ex parte Forman*, 230 USPQ 526, 547 (Bd. Pat. App. & Int. 1986). The burden is on the examiner to establish a reasonable basis to question the adequacy of appellant's disclosure. *In re Marzocchi*, 439 F.2d 220, 223-224, 169 USPQ 367, 370 (CCPA 1971). On the record before us, we are not persuaded that the examiner has met this burden.

While catalytic processes can be unpredictable, the examiner's broad assertion of unpredictability based on the fact the number of fluorinated catalysts is virtually limitless, without more, is not dispositive on the question of undue experimentation. The examiner has not explained how the relative skill of those in the art would have found the claimed process to be unpredictable so as to necessitate undue experimentation in view of the numerous "suitable" fluorinated catalysts disclosed by appellant on page 4 of the specification. In addition, the examiner has not explained how much experimentation is necessary and why extensive experimentation and the nature of the invention would require undue experimentation. Furthermore, the examiner has not provided evidence and/or presented scientific reasoning with reference to the state of the prior art which would have led a person having ordinary skill in the art to question why all known fluorinated catalysts could not be employed in the practice of the claimed process.

Appellant has presented two working examples in his specification. The first example uses an alumina catalyst while the second example uses a fluorided alumina catalyst. The examiner has not found these examples to be non-enabling. Appellant states that "fluorination catalysts" are known in the art in processes involving the fluorination of fluorochloroethane compounds and cites Patent

No. 5,243,105 to Scott issued September 7, 1993 as evidence to that fact (see col. 2, lines 24-42).

On page 4, lines 3-14 of the specification, appellant discloses numerous examples of what constitutes a “fluorination catalyst.” According to appellant,

[c]atalysts which may be used in accordance with this invention include alumina; fluorided alumina; aluminum fluoride; metals supported on alumina; metals supported on aluminum fluoride; magnesium fluoride supported on aluminum fluoride; metals supported on fluorided alumina; alumina on carbon; aluminum fluoride on carbon; fluorided alumina on carbon; metals supported on carbon; chromium catalysts; mixtures of metal halides, aluminum fluoride, and graphite; and chromium-magnesium optionally supported on graphite. Suitable metals include chromium, Group VIII metals (e.g., iron, cobalt and/or nickel), Group VIIB metals (e.g., manganese), Group IIIB metals (e.g., lanthanum), and zinc.

Appellant further cites patents which teach how to make a fluorided alumina catalyst, a aluminum fluoride catalyst, catalysts comprising metals on aluminum fluoride or fluorided alumina, chromium catalysts such as mixtures of chromium and magnesium, and chromium on carbon. While appellant has not specifically disclosed every known fluorinated catalyst which will work in the claimed process, there is no such requirement contemplated under the statute. *See In re Angstadt*, 537 F.2d 498, 502-504, 190 USPQ 214, 218 (CCPA 1976). Accordingly, we find that appellant has presented sufficient direction and guidance such that a person having ordinary skill in the art could practice the invention without an undue amount of experimentation.

Most of the catalysts set forth on page 4 of the specification are recited in appealed claim 2 from which claims 3-6 depend while claim 11 encompasses only some of the listed catalysts. The examiner asserts that the recitation of catalysts in claim 2 is unduly broad in that

... the recitation of “chromium catalysts” is virtually limitless including catalysts

wherein the chromium may be present in minor amounts with any number of other active components. Furthermore, the definition for “metal” is unduly broad in that it would result in literally thousands of catalyst compositions. This is so in view of the fact that recitations such as “metals on carbon” are not limited to single metal compositions but include an unspecified number of metals from within the broad groups recited.

It is noted that there are no specific catalysts listed in claim 2 except for cobalt and the assumption that all known “fluorination catalyst(s)” would function in the unpredictable manner required by the claimed process is incredible based upon this limited disclosure.

The recitation “comprises aluminum fluoride” (claim 3) does not overcome the deficiencies of the enablement in the specification in that the use of “comprises” results in a claim which does not exclude the “metals supported on aluminum fluoride” of claim 2 from which it depends and therefore is not supported by an adequate enabling disclosure for the reasons described above for claim 2.

The catalyst used in the process of claim 11 is virtually identical in scope to that used in the process of claim 2 and is deficient for the reasons given above for claim 2. [Answer: p. 4-5; emphasis in the original.]

We cannot agree with the examiner. While the examiner correctly presumes that the recitation of “fluorinated catalyst” in claim 1 which includes “chromium catalysts” and Groups IIIB, VIIB and VIII metals on carbon, graphite, alumina, aluminum fluoride, and fluorided alumina supports must be taken as an implied assertion by appellant that all members of this particular class of catalysts can be employed in the claimed process, the breadth of “fluorinated catalyst”, “chromium catalysts”, or “metals” should be of no concern to the examiner. It is the accuracy and truth of the implied assertion which should be the only concern of the examiner. The requirement of 35 U.S.C. § 112, first paragraph is nothing more than an objective enablement. On the record before us, the examiner has not presented any scientific reasoning or evidence to create a reasonable doubt on the accuracy and truth of the statements contained in the specification regarding the use of fluorination catalysts

in the claimed process. In the absence of such reasons or evidence, appellant's disclosure must be taken as being in compliance with the enablement requirement of the first paragraph of 35 U.S.C. § 112. The burden is on the examiner to establish an adequate basis to question the adequacy of appellant's disclosure. *In re Marzocchi*, 435 F.2d at 223-224, 169 USPQ at 370. On this record, the examiner has not met his burden.

For the foregoing reasons, we will not sustain the rejection. Accordingly, the examiner's decision rejecting claims 1-11 under 35 U.S.C. § 112, first paragraph, is reversed.

REVERSED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
BRADLEY R. GARRIS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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)	
CAMERON WEIFFENBACH)	
Administrative Patent Judge)	

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DAVID E. HEISER
LEGAL - PATENTS
E. I. DU PONT DE NEMOURS & CO.
WILMINGTON, DE 19898